

## ANTHIDIUM POLINGÆ, NEW SPECIES, FROM TEXAS

BY HERBERT F. SCHWARZ

♀. Head a little broader than long and immaculate except for a cream-colored oval spot above each eye. The mandibles sexdentate, the outer tooth the largest and longest. The clypeus convex and prominent, slightly emarginate and crenulate to subdentate along the middle of its apex; two teeth on each side of its apex, of which the inner tooth is the more prominent. The clypeus and adjacent sides of the face densely and coarsely punctated; the front and vertex densely but less coarsely punctated, the punctures being of smaller size than those of the clypeus. The upslanting hairs of the front and those fringing the scape of a more luminous and brighter gray in certain lights than the rather dull, downslanting gray hairs of the lower half of the face and of the cheeks. The hair of the vertex ochraceous to faintly golden; the hairs fringing the apex of the clypeus copper-tinged.

The mesonotum with hair of hue identical with that of the vertex. The hair on the pleura gray, of a tinge approximating that of the hair on the lower half of the face. The mesonotum and scutellum densely and rather evenly punctated, the punctures slightly larger than those on the vertex but smaller than those on the clypeus. The mesopleura densely punctated, the density and size of the punctures much like those of the mesonotum. The basal part of the triangular enclosure of the propodeum broadly covered with small punctures that are arranged more or less chainlike on a feebly tessellated surface. The apical part of the triangular enclosure devoid of punctation, feebly, almost negligibly tessellated, verging on the smooth. An abbreviated cream-colored linear maculation along each side of the anterior margin of the mesonotum separated from the antero-lateral angle of the mesonotum by its own length or less; usually also a linear maculation of feebler development and of more restricted length on each of the lateral margins of the mesonotum just above the tegulæ; the tegulæ cream-colored except for a large brownish pupil; the tubercles cream-colored; and four cream-colored spots (not confluent) arranged in a semicircle along the posterior half of the axillæ and scutellum.

The legs for the most part (coxæ, trochanters, femora, tibiæ) with gray hairs similar to those on the face and pleura. Densely matted, felt-like patches of white hair on the antero-basal half or two-thirds of the front and middle basitarsi externally and over most of the external surface of the hind basitarsi. These white patches are in sharp contrast to the black hairs on the postero-apical half or third of the front and middle basitarsi, along the anterior margin of the hind basitarsi and on the under side of all the

basitarsi. The lower tarsal joints with mostly black hair, occasionally partly replaced by silvery hairs, especially on the hind pair of legs. The tarsal claws largely dark red, verging on black throughout—only in a few of the specimens is the basal portion of the claws of a well differentiated, lighter hue than the apical portion. The tibial spines of the hind leg are black. There is a cream-colored linear maculation of variable length on all of the tibiæ, in some instances extending far down the joint (particularly is this true in the case of the hind and sometimes the front tibiæ), in other instances confined to the base.

The wings are hyaline, the nervures dark; a brown streak traverses the marginal cell from its base almost to the apex.

The tergites of the abdomen rather sparsely punctured, the punctures a little denser toward the side as contrasted with the middle of each tergite and denser on the apical tergite than on those preceding. The punctures tend to arrange themselves in irregular chains. On the apical rims of the tergites the punctures are distinctly smaller, denser, and more clearly defined than on the basal part of the tergites, but even here the density is less than is the case in most of the other species, smooth spaces frequently intervening between the more or less chainlike groupings. Gray hairs cover the first five tergites rather uniformly if sparsely. On the apical tergite (sometimes also the penultimate) these gray hairs are often largely or wholly replaced by black, and the dense ventral scopa is pitch black. Tergites 1-5 with cream-colored maculations, tergite 6 usually entirely black but sometimes (2 out of 9 instances before me) with two feeble maculations. Tergite 1 usually four-spotted, the inner maculations linear to cuneiform and smaller than the outer ones, which have a slight emargination on their inner side. The maculations on tergites 2-4 consist of two clearly and rather widely separated halves each of which is deeply and broadly emarginate above, resulting in club-like extremities connected by a narrow band. In the case of tergite 2, the outer clavate elements are the larger, the inner clavate elements the smaller. In the case of tergite 3 (usually) and tergite 4 this condition is reversed, and sometimes on tergite 4 the outer elements are even lacking, merely two inner spots surviving. What is exceptional for tergite 4 is the rule for tergite 5. The apical contour of tergite 6, viewed from above is devoid of toothlike interruptions. There is a shoulderlike rounding of the surface on each side of the tergite. The apex of the tergite is broadly subtruncate with a little notch in the center, where the sting emerges.

♂. The entire clypeus, except for its medianly somewhat deeply and broadly emarginate apex, which when viewed from above seems rimmed with brown, is uniformly cream-colored as are the cuneiform marks that fill the spaces between the clypeus and the eye to the level of the antennæ. Also cream-colored are the mandibles except for their tridentate apical extremity, a stripe (sometimes feebly developed) on the scape in front, and an oval spot above each eye. The hair on the face both above and below the antennæ and fringing the scape is abundant and of a glistening white.

The upper contour of this hirsute area is sharply defined at the level of the ocelli, with a V-shaped emargination at its middle where the anterior ocellus cuts in. The hairs of the vertex, as in the female, incline to light yellowish or pale golden.

The sculpture, color of the hair, and maculations of the thorax like those of the female except that the maculations on the anterior margin of the mesonotum are more developed and the maculations on the axillæ are diminutive (in one specimen even lacking).

The dense felt-like patches of white hair present on the basitarsi of the female are replaced in the male by longer, sparser, silvery hairs and the contrasting hairs of black are confined largely to the underside of the basitarsi. The front femora sometimes with a cream-colored posterior spot near the apex; a stripe of similar color along the exterior of the front tibiæ, nearly attaining the apex; the middle tibiæ usually with a stripe running externally from base to apex (sometimes medianly interrupted); the hind tibiæ with a more or less extended linear maculation at the base; all of the basitarsi externally with a pale stripe of usually feeble development.

Tergite 1 maculated in a manner rather similar to that of the female, with four widely separated spots—the outer ones large, the inner ones small. The subsequent tergites with a band that is medianly widely sundered, as in the female. The resulting halves with a deep, rather wide, subrectangular emargination above. So deep are these emarginations on tergite 2 (and sometimes also on tergite 3) that a four-spotted condition results. On tergites 2-3, as on tergite 1, the outer elements of the maculation are larger than the inner; on tergite 4 inner and outer elements are subequal; on tergite 5 the inner elements are the more developed; on tergite 6 there are two large inner spots, sometimes more or less comma-like. The pygidium has a spot of variable extent on each of its lateral lobes. The pygidium rather unstable also in shape, the lateral lobes of variable width from specimen to specimen, but in all cases narrower at the level of the apex of the central spine than the distance separating the inner contour of each at this level from the spine. The curvature of this inner contour is gradual and regular, without angulation, so that, if the central spine be disregarded, the shape approximates that of a semi-circle. The outer apical contour of the lobes is, on the other hand, at more or less of an angle with the outer basal part. The central spine extends only about half as far as the lateral lobes. The range of variability of the pygidium is shown in Plate XIX, Fig. 1 (type) and Fig. 2 (a paratype). The spines on each side of segment 6 are straight, not incurved and hook-like. The hair on the abdomen of the male, in contrast to that of the female, is wholly or predominantly silvery both below and above, only one of the three specimens having a very slight admixture of dark hairs on the under side of the abdomen. The last visible sternite (Fig. 5 of Plate XIX) largely black, with an obtuse faint angulation on each side of the apex and a ferruginous and triangular extension (slightly emarginate at the tip) at the middle of the apex. There is a short, longitudinal, shiny, almost tubercle-like carina at

the middle of the base of this sternite and a polished area extends broadly from it almost to the apex of the median extension.

The female of this species is one of the few representatives of *Anthidium* in North America that has exclusively black ventral scopa. Eliminating species like *tenuifloræ*, in which the scopa is occasionally sepia-colored, the following key may be of service in differentiating females of *polingæ* from those of other species that also have dark scopa either regularly or exceptionally.

KEY TO FEMALES WITH DARK SCOPA

1. The clypeus or the adjacent parts of the sides of the face, almost invariably both, with yellow. The bands on tergites 2-4 continuous, being merely notched at the middle and more or less sinuously emarginate above on the sides. Tergite 6 heavily and continuously maculated. The ventral scopa not always dark, frequently with light bordering hairs, and sometimes all but replaced by light hairs.....*aridum*  
The clypeus and the adjacent parts of the sides of the face black. The maculations on tergite 2-4, when band-like, usually with a distinct if narrow median separation. Tergite 6 two-spotted or immaculate.....2
2. The tibiæ immaculate. Tergite 5 as well as 6 immaculate.....*atripes*  
The tibiæ with at least basal spots. Tergite 5 and sometimes 6 with maculations .....3
3. Robust, 10-12 mm. Median interruption on abdominal bands wide. Tergite 1 four-spotted; tergite 6 more often immaculate.....*polingæ*  
Slender, 7-9 mm. Median interruption on abdominal bands narrow. Tergite 1 with a medianly interrupted band, the lateral halves sometimes enclosing a black dot; tergite 6 more often maculated.

*atriventre* (*astragali*)

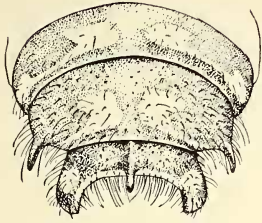
Although the female of *polingæ* seems in many ways close to that of *atriventre*, the male of *polingæ* differs structurally from that of the related species. The lobes of the pygidium, although variable, are much more slender than those of *atriventre*, in the most extreme case (the type—see Fig. 1 of Plate XIX) approximating the condition represented by *palliventre* (*californicum*). Another, even more marked structural difference is in the apical process on the last visible sternite. The lateral elements of this process are in *polingæ* (Fig. 5 of Plate XIX) very obtusely triangular; in *atriventre* (Fig. 4 of Plate XIX) they are acutely triangular and at their termination rather spine-like. Superficially the male of *polingæ* is at once separable from that of *atriventre* by its greater size and by the medianly widely separated bands on tergites 2-5; in *atriventre* the bands on these

segments are merely emarginate medianly. The same characters make possible the separation of the male of *polingæ* also from *aridum*, with which species its relationship is at best remote. Probably its closest relative is *atripes*, but the male of *polingæ* is readily differentiated from the male of *atripes* among other characters by the presence of developed maculations on its legs, by the presence of pale pile instead of black, and by the fuller maculation of its abdomen, the maculations of *atripes* not extending beyond tergite 5. The apex of the clypeus of the males of both *atripes* and *polingæ* has a rather strong curvilinear emargination medianly, and the punctures on the apical rims of the tergites are not so crowded as in many other species and have a tendency to arrange themselves in chainlike groupings.

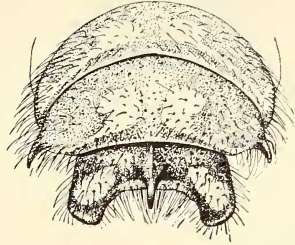
The above descriptions are based on 11 females and 3 males, all collected by Mrs. O. C. Poling, after whom the species is named. The specimens all bear the same data: "Ft. Davis, Texas, Jeff Davis Co., 5000 ft., Davis Mts., July-Aug. '27 and '28." They were submitted to me through the courtesy of Professor H. A. Scullen, of Oregon State Agricultural College, to whom the holotype, allotype, and eight paratypes have been returned. The remaining four paratypes are in the American Museum. The figures of the plate accompanying the description have been prepared by Mrs. E. L. Beutenmüller.

## PLATE XIX

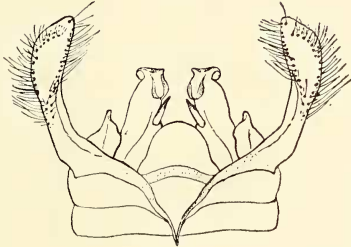
- Figure 1. Dorsal aspect of the apical part of the abdomen of *Anthidium polingæ*, with special reference to the structure of the pygidium. (Type specimen.)
- Figure 2. Dorsal aspect of the apical part of the abdomen of one of the paratypes of *Anthidium polingæ*, showing the extreme width of the variable lateral lobes of the pygidium.
- Figure 3. Genitalia of *Anthidium polingæ*. A composite drawing based on the three male specimens.
- Figure 4. Ventral aspect of the apical part of the abdomen of *Anthidium atriventre* after removal of the genitalia, with special reference to the rather spinelike lateral processes on the last visible sternite.
- Figure 5. Ventral aspect of the apical part of the abdomen of *Anthidium polingi*, showing the much less angular lateral processes on the last visible sternite. The genitalia had previously been removed.



1.



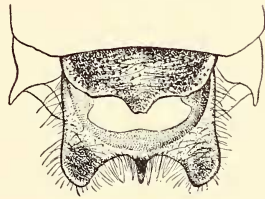
2.



3.



4.



5.

ANTHIDIUM